AMENDMENT TO CLAIMS

Sub E7
D1
cont

Claims 1-2 (cancelled)

Claim 3. (Previously presented): The method of Claim 8, wherein the system also includes a lens system, and wherein the at least one property is focal length of said lens system.

Claim 4. (Previously presented): The method of Claim 8, wherein the system also includes a lens system, and wherein said property is f-number of the lens system.

Claim 5. (Previously presented): The method of Claim 8, wherein the operator depends on a source of illumination used to generate the image.

Claim 6 (Previously presented). The method of Claim 8, wherein said operator depends on the type of scene captured in the image.

Claim 7 (Cancelled)

Claim 8. (Currently amended) A method of processing an input digital image produced by an optical system, ~~including a sensor that detects~~ the input image having less than full color information at each of a plurality of pixels ~~location~~, the method comprising:

accessing an operator including an array of demosaicing weights, values of the weights determined by at least one property of the optical system; and

~~forming a plurality of input vectors from the image, each input vector including a plurality of pixel intensities; and~~

applying the operator to the input image ~~vectors~~ to produce an output image having full color information at each of a plurality of pixels ~~of the digital image~~.

Claim 9. (Previously presented) The method of claim 8, wherein the operator compensates for degradation in the optical system.

Claim 10. (Currently amended) The method of claim 8, wherein applying the operator includes forming a plurality of input vectors from the input image, ~~wherein~~ each input vector [is] formed from super pixels, and applying the operator to the input vectors.

Claim 11. (Currently amended) The method of claim 8, wherein the operator is used for [all] different resolutions, and a resulting fixed resolution image is resampled.

Claim 12. (Previously presented) The method of claim 8, wherein the operator is also based on a set of known images.

Claim 13. (Previously presented) The method of claim 8, wherein different operators are used for different images.

Claim 14. (Previously presented) A processor for performing the method of claim 8.

Claim 15. (Previously presented) An article for a processor, the article including computer memory encoded with instructions for causing the processor to perform the method of claim 8.

D' cont

Claim 16. (Previously presented) A digital camera including a processor programmed to perform the method of claim 8.

E' cont

Claim 17. (Previously presented) The digital camera of claim 16, further comprising memory for storing a plurality of candidate operators; and wherein the processor is programmed to access the operator by selecting the operator from one of the plurality of candidates.

Claim 18. (Previously presented) A method of generating a linear operator for demosaicing of a digital image by a digital camera, the method comprising using camera parameters to design coefficients for the linear operator.

Claim 19. (Previously presented) The method of claim 18, wherein a standard noise model and a linear minimization technique are used to generate the coefficients from the camera parameters.

Claim 20. (Previously presented) A computer programmed to perform the method of claim 18.

Claim 21. (Previously presented) The method of claim 8, wherein the values of the demosaicing weights are determined to additionally compensate for image degradation.

Claim 22 (Previously presented). The method of claim 8, wherein the operator is accessed from a plurality of different operators.

Claim 23 (Previously presented). The method of claim 22, wherein the operators are included in T-matrices.

Claim 24 (Previously presented). The method of claim 8, wherein the at least one property contributes to image degradation.

Claim 25 (Previously presented). The method of claim 8, wherein the at least one property is variable from system to system.

Claim 26. (Previously presented) The method of claim 18, wherein the camera parameters are used so that the coefficients are designed to perform both demosaicing and compensation of image degradation by the digital camera.